PROJECT NUMBER: 1307
PROJECT TITLE: Reconstituted Tobacco Development
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PERIOD COVERED: May, 1990

I. ART STEM UTILIZATION

A. **Objective:** Develop the capability to fully utilize spent absorber stems from the ART process.

B. **Results:** The status on qualifying the use of ART stems in reconstituted sheet feedstocks is as follows:

MPC Stems: POL 3637 containing RCB made with 2% MPC stems was mailed to panelists. The Scheduled POL closeout date is June 7. Completion of data analysis and issuing of final results is expected in early July.

CA Stems: Cigarettes to evaluate CA stems in sheet are being remade the week of 6/4. Two test models are being produced containing RCB made with 5% CA stems and RLTC made with 2% CA stems; one model contains RLB control sheet and the other contains RLB test sheet also made with 2% CA stems.

Bermuda Pilot Plant test runs were completed for the purpose of generating spent stem samples intended to differentiate the independent effects of citric acid casing, supercritical fluid, and filler extraction on the subjective quality of ART stems. The stem samples are undergoing rigorous analytical testing in an attempt to relate chemical and subjective changes. Pilot RL sheets incorporating 12% of each stem type were completed 5/22, and will be used for the subjective screening process.

C. **Plans:** Expedite internal panel testing of sheet materials made with CA stems to obtain a recommendation on POL testing. Complete subjective screening of pilot RL made with stems from various stages of ART processing.

II. CAST SHEET

A. **Objective:** Develop subjectively and physically acceptable reconstituted sheets for domestic and international application using cast sheet technology and proprietary binder systems.

B. **Results:** Flavor Development provided four flavor mixtures for use with guar gum cast sheets made with the Spanish tobacco blend. These have each been made into handsheets with and without the inclusion of 3% DAP as an added

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flavor ingredient. Handmade 100% cigarettes are submitted for subjective screening. Test sheets with and without 3% DAP, along with the respective "best" flavor system for that sheet, will be made at the TSA cast sheet facility in Cadiz, Spain when the facility is available for trials.

Evaluation of new binders continued. The potato starch recommended by KGF would not form a physically acceptable sheet even at high binder inclusion levels and was judged subjectively unacceptable (like RL baseweb with offnotes). The same performance is expected from other straight-chain starches. KGF is recommending several modified (branched) starches for evaluation.

Flour of the Konjac tuber (used in food preparation and approved for sheet testing) improves sheet physicals at low incorporation levels, although it does leave some "lumps" in the sheet. Subjective screening is pending.

Additional tamarind gums were evaluated, but none formed an acceptable sheet. A sample of the tamarind used by TSA in Spain (a 7/1 tamarind/guar blend) has been received and will be evaluated in handsheets.

TIC Corp. provided a sample of Colloid 3F (a mix of guar, pectin and alginate). This material is a low viscosity gum and gave acceptable sheet physical quality. Additional testing is pending subjective screening results.

A program was initiated to attempt the liberation of tobacco pectin by a combination of steam temperature/pressure treatment. This could allow the production of cast sheet without the need for chemical (DAP/ammonia) addition or added binders. The University of Maine TMP (thermomechanical pulping) unit, which does not encompass a rapid pressure release step, did not liberate the tobacco pectin. The feasibility of trials on a Sunds Defibrator TMP unit at Herty Foundation or on the batch digester/blow tank being installed at Maine is under evaluation.

C. Plans: Schedule cast sheet trials at the TSA facility in Cadiz, Spain using guar binders with and without DAP or added flavors; complete evaluation of the Spanish tamarind/guar binder to determine whether this should be included in the Cadiz test program.

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